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EXHIBIT A

20. (Amendcd) A planar array of beads comprising[: a substrate; and a planar assembly of beads non-randomly arranged in a designated area on said substrate in substantially one layer, wherein said beads have] beads having biomolecules attached to their surfaces, wherein the beads comprise different types of beads, said bead types being distinguishable by the biomolecules attached thereto.

25. (Amended) The array of claim 20, [wherein the beads comprise different types of beads, said bead types being distinguishable by the biomolecules attached thereto and] wherein the beads of each type are further distinguishable by a unique chemical or physical characteristic that identifies said bead type.

27. (Amended) The array of claim 20, [wherein the beads comprise different types of beads, said being types being distinguishable by the biomolecules attached thereto, and] wherein the array comprises subarrays that are spatially separated from each other, the location of the subarrays [on the substrate] uniquely identifying the types of beads located therein.

28. (Amended) The array of claim 20, wherein the [substrate comprises] bead array is on a silicon electrode.

30. (Amended) A method of detecting the formation of a target-biomolecule complex comprising the following steps:
providing an array of beads [on a substrate] according to claim 20;
contacting said beads with a sample that may contain a target compound such that, if the target is present in the sample, said target binds [interacts] with said biomolecules to form a target-biomolecule complex; and

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detecting the formation of the target-biomolecule complex.

32. (Amended) A method of detecting the formation of a target-biomolecule complex comprising the following steps:

providing an array of beads [on a substrate] according to claim 20, [wherein said beads comprise different types of beads, said bead types being distinguishable by the biomolecules attached thereto, and wherein the beads of each type are] wherein the bead types are further distinguishable by a unique chemical or physical characteristic that identifies said bead type;

contacting said beads with a sample that may contain a target compound such that, if the target compound is present in said sample, said target compound binds [interacts] with said biomolecules to form target-biomolecule complexes;

detecting the formation of the target-biomolecule complexes; and

identifying the biomolecules of the target-biomolecule complexes by means of the unique chemical or physical characteristic of the beads associated with said complexes.

40. The method of claim 32, wherein the [substrate comprises] bead array is on a silicon electrode.